# ACTINIARIA

BY

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LUND

collection of Actiniaria taken by the
lition is small and consists of four species
The samples are, unfortunately, all
g, sterile and badly preserved and there-
it is very difficult to decide their syste-
position. The collection is, however,
esting in that it shows that Actinian
es can live in a depth of almost 6,000 m.

) **Paraedwardsia abyssorum** n. sp.

Text-figs. 1—3.

erial: St. 329 (Haul No. 3), N 09° 38′
26° 20′—N 09° 50′ W 20° 30′, July 3rd
48; depth 5,610—5,600 m. 1 specimen.

e in contracted state (the distal part is
gly introverted so that the tentacles come
in the middle of the animal): length 2
argest diameter in the proximal part 0.5
The form of the single sample is cylindrical
somewhat swollen at the rounded basal,
a-like end. The body is divisible into
us and scapulus (and capitulum?). The
erm of the former is provided with a
cuticle and incrusted with detritus, that
e latter lacks a cuticle. The mesogloea
e scapus runs out in numerous fine pa-
very closely set and distinctly visible
the help of a lens in the lower part of the
; in the swollen physa-like end the ecto-
has fallen away as well as in the
above it. Whether the papillae stay in
ection with tenaculi is doubtful. It is
y possible to decide that, as the ectoderm
ually torn from the mesogloea and not
preserved even where the ectoderm remains
ne papillae. The mesogloea of the column
shows a stratification recalling that in *Halcampa* (CARLGREN, Studien über Nordische Actinien 1893, Svenska Vetenskaps-Akademiens Handl. 15. No 10). The column lacks a sphincter. There are seemingly 12 tentacles, 8 perfect mesenteries and probably a few microcnemes in the uppermost part of the body. The retractors are strongly restricted, in cross-section kidney-like, and form only few, slightly branched folds. The outer, lameller part of the perfect mesenteries are fastened not far from the outer side of the retractor. The parietal muscles are very strong, in the uppermost part of the mesenteries weaker, in the lowest the muscles form an almost straight lamella on both sides of the mesenteries. The specimen is sterile. The nematocysts of the scapus are 39.5—41 × about 3 $\mu$ (they are seemingly very rare as I have found only three); those of the tentacles are 41—58 (70.5) × 3—3.5 $\mu$, basitrichs; those of the filaments partly 25.5—31 × 4.2 (4.5) $\mu$, microbasic *p*-mastigophors, partly 35.2—42.3 × 5.6 $\mu$, partly 24—28.2 × 3 (3.5) $\mu$, both basitrichs.

I have in figures 1—3 drawn cross-sections 1) of a part of scapus, 2) of a retractor a mesentery and 3) of a parietal muscle.

I have provisionally referred the species to the genus *Paraedwardsia*, though I am not sure that there are tenaculi here. Possibly we have to do with a new genus, but it is necessary to examine more material of the species before we can create a new genus.

2) A second species was taken at St. 371 (Haul No. 10),N 24° 12′ W 63° 23′—N 24° 28′ W 63° 18′, Aug. 20th 1948; depth 5,850—

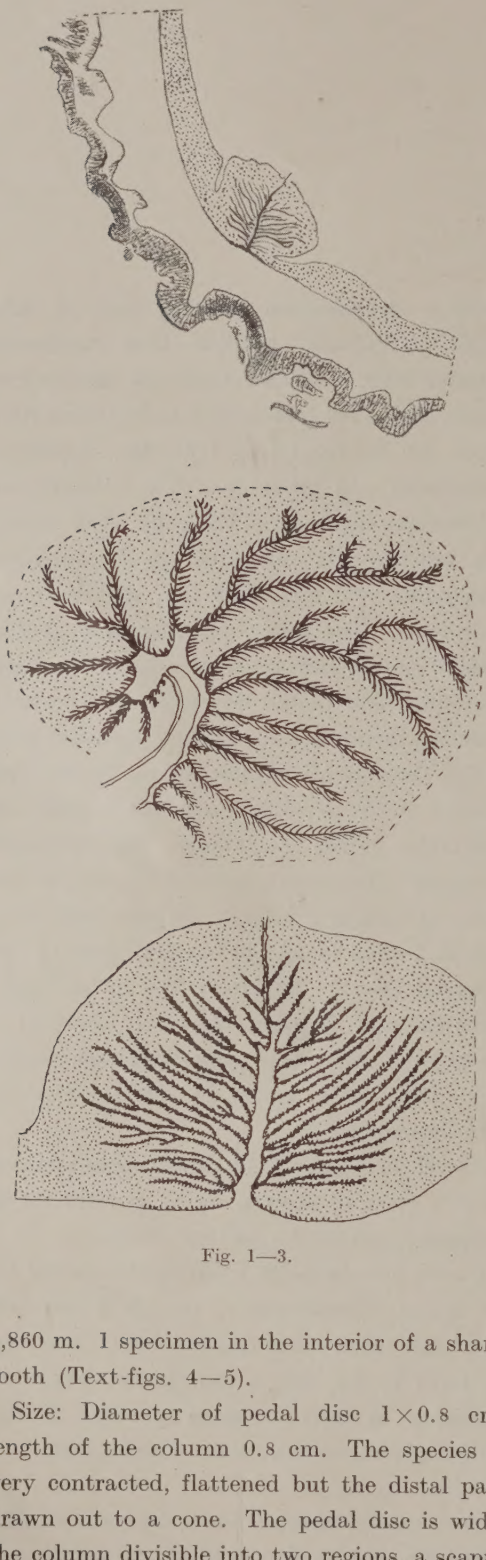

Fig. 1—3.

5,860 m. 1 specimen in the interior of a shark tooth (Text-figs. 4—5).

Size: Diameter of pedal disc 1×0.8 cm, length of the column 0.8 cm. The species is very contracted, flattened but the distal part drawn out to a cone. The pedal disc is wide, the column divisible into two regions, a scapus provided with a brownish cuticle and a scapu-

lus. It is difficult to count the num tentacles without destroying the spe their longitudinal muscles are ectoderma sphincter is very strong, alveolar and oc almost the whole, thick mesogloea. siphonoglyphs are seemingly present. the bad preservation and the strong co tion of the animal it is very difficult to the number of the perfect mesenteries there seem to be six pairs. There are 2 of imperfect mesenteries. The retracto rather weak. The nematocysts of the are 25.4—32.4×(4.2) 5—6 $\mu$, basitrichs, a little curved; those of the tentacles 17× about 2.5 $\mu$, basitrichs; those o actinopharynx partly 18.3—24 × abou microbasic *p*-mastigophors, partly 18.3 ×2.8 $\mu$, basitrichs; those of the fila partly 22.6—25.4× about 4.2 $\mu$ microba mastigophors, partly 12.7—16.9×22—28 sitrichs. The spirocysts of the tentacl very large, usually 35—67×5.6—8 $\mu$. 4 shows a section of a sphincter and 5 the retractors of a directive mesentery.

It is very difficult to clear up the po of this species. If there were acontia pr the species should be an *Hormathiid* I have not found any acontia in spite of s examinations of the very macerated filar However, I think that the species belo this family. There is nothing else in its nization contradicting such a supposition very long and broad spirocysts present are also characteristic of most of the H thiid genera.

3) A third species was taken at St (Haul No. 6), N 02° 26′ W 39° 26′—N 0 W 39° 32′, July 26th—27th 1948 in d between 4,474 and 4,430 m. It was a ed to a piece of a meteorite. The s very small: length 0.3 cm, breadth a base 0.3 cm, in the distal part 0.2 cm. to the smallness of the animal and it preservation I have not been able to ex

ample closely. The nematocysts of the ia are partly $25.4-31\times3-4.2\ \mu$, basi-, partly $42.3-50.8\times$ about $5.6\ \mu$, microba-mastigophors; those of the tentacles -$29.6\times3.5-4.2\ \mu$. The retractors of the iteries are strong. The species is a tiid.

Two specimens of a fourth species were ed at St. 357 (Haul No. 6), N 02° 26′ ° 26′—N 02° 24′ W 39° 12′, July 26th—1948 in depths between 4,474 and 4,430 m. ize of the specimens is small, the pedal of the largest specimen is $1.2\times1$ cm. body is flattened, the sphincter is meso-, alveolar. The nematocysts of the ten- are $20-21\times3-3.5\ \mu$, basitrichs; those e actinopharynx $19.7-24\times$ about $3\ \mu$; of the filaments partly $21-24\times4\ \mu$, basic *p*-mastigophors, partly $12.7-15.5\ \mu$, basitrichs. The position of this species not decide.

## General Remarks

greatest depth from which any species tiniaria has up till now been dredged 00 m. I disregard an account of GRAVIER about a find of a Hexactinia in a depth 035 m, as GRAVIER's determination of iaria is not good and sometimes does efer to this group of Anthozoa. As we om the above, two of the species taken e present expedition were taken in depths out 5,600 and 5,850 m, thus about 300 550 m deeper down, showing that some iaria are able to live in so great depths. is, however, questionable if the species apable of propagating themselves here. resent collection does not give any answer species are sterile but three of the species oned below from depths between 5,000 5,300 m are provided with reproductive s. I list here all Actiniaria previously n from depths of 3,000—5,300 m. About

Fig. 4—5.

half of them were taken by the »Challenger» expedition.

5,000—5,300 m: »*Antheomorphe elegans*»[1]) R. Hertw., »*Chitonanthus abyssorum*» Grav., »*Paractis vestita*» Grav., »*Paractis flava*» Grav., *Synsicyonis elongata* (R. Hertw.), *Amphianthus ornatus* R. Hertw.

4,000—5,000 m: *Actinernus elongatus* (R. Hertw.), *Actinernus michaelsarsi* Carlgr., *Bathydactylus valdiviae* Carlgr., *Actinauge abyssorum* Carlgr., *Paracalliactis michaelsarsi* Carlgr., *Amphianthus bathybium* R. Hertw., »*Sagartia*» sp? Grav., »*Adamsia*» sp? Grav., »*Chitonanthus indutus*» Grav., *Kadosactis* (*Sicyopus*) *commensalis* (Grav.).

3,000—4,000 m: *Actinernus robustus* (R. Hertw.), *Bolocera maxima* Carlgr., *Bolocera?* (*Polystomidium*) *patens* (R. Hertw.), *Liponema multiporum* R. Hertw., »*Polypis striata*» R. Hertw., *Sicyonis tubulifera* R. Hertw., *Sicyonis ingolfi* Carlgr., *Ophiodiscus annulatus* R. Hertw. *Tealidium cingulatum* R. Hertw., *Tealidium jungerseni* Carlgr., »*Aulorchis paradoxa*» R. Hertw., *Hormathia spinosa* (R. Hertw.), *Amphianthus margaritaceus* (Dan.), *Amphianthus radiatus* R. Hertw.

[1]) All species marked with invested comma need revision.

## Literature

CARLGREN, O. Actiniaria. The Danish Ingolf Exped. P. 1. V. 9. 1921, P. 2. V. 12. 1942.

— — Actiniaria der Deutschen Tiefsee-Expedition. Wiss. Ergebn. XXII 4 1928.

— — Ceriantharia, Zoantharia and Actiniaria. Report Scien. Res. Michael Sars North Atlantic Deep-Sea Exped. V. 1934.

GRAVIER, Ch. Hexactinidés etc. Résult. Camp. S Prince de Monaco LXIII. 1922.

HERTWIG, R. Report on the Actiniaria et lenger Reports. Zool. 6 1881, Suppl. 1889.